

Claims

1. The fluid pump, in particular for a fuel injection apparatus of an internal combustion engine, having a housing (10, 12) that contains a pump chamber (14) in which at least one rotary driven delivery element (16, 18) is contained, which delivers fluid to a pressure chamber (42) from an intake chamber (40) connected to a reservoir, and having a pressure limiting valve (50) for limiting the pressure prevailing in the pressure chamber (42), which valve has a valve piston (60) inside the housing (10, 12), which valve piston (60) is acted on in the closing direction by a prestressed closing spring (62) and is acted on in the opening direction by the pressure prevailing in the pressure chamber (42) and, when a predetermined pressure in the pressure chamber (42) is exceeded, opens a connecting conduit (52) from the pressure chamber (42) to the intake chamber (40), characterized in that the fluid pump is preceded by a filter (82) and/or is followed by a filter (83), in that the fluid pump is provided with a pressure chamber (85) that has a connection to a region downstream of the preceding filter (82) or a connection to a region downstream of the subsequent filter (83), and in that the pressure prevailing in the pressure chamber (85) influences the force on the valve piston (60) in the closing direction in such a way that as the pressure in the pressure chamber (85) decreases, the force on the valve piston (60) in the closing direction increases.
2. The fluid pump according to claim 1, characterized in that the pressure chamber (85) is delimited by a moving wall (86), one side of which is acted on by the pressure prevailing in the pressure chamber (85) and the other side of which is acted on by a prestressed spring (89) that pushes the wall (86) toward the valve piston (60) in its closing direction.

3. The fluid pump according to claim 2, characterized in that the moving wall (86) is supported against the valve piston (60) by means of a rod (88).
4. The fluid pump according to claim 2 or 3, characterized in that the moving wall (86) is embodied in the form of a diaphragm.
5. The fluid pump according to one of the preceding claims, characterized in that the valve piston (60) at least partially delimits the pump chamber (14) in the direction of the rotation axis (25, 27) of the at least one delivery element (16, 18), in that the closing spring (62) presses the valve piston (60) against the end surface of the at least one delivery element (16, 18) oriented toward it, which end surface functions as a valve seat, and in that the pressure prevailing in the pressure chamber (42) acts on at least part of the end surface of the valve piston (60) oriented toward the at least one delivery element (16, 18).
6. The fluid pump according to claim 5, characterized in that the connecting conduit (52) between the pressure chamber (42) and the intake chamber (40) is embodied in the form of a groove let into a housing part (10) facing the end surface of the at least one delivery element (16, 18) and the valve piston (60) controls the passage through this groove.
7. The fluid pump according to claim 5 or 6, characterized in that as the pressure in the pressure chamber (42) increases, the valve piston (60) opens an ever greater through flow cross section in the connecting conduit (52).

8. The fluid pump according to one of claims 5 through 7, characterized in that the diameter of the valve piston (60) is greater than the width (b) of the connecting conduit (52).

9. The fluid pump according to one of the preceding claims, characterized in that the valve piston (60) is guided so that it is able to move in a bore (56) of a housing part (10) and in that the intake chamber (40) is connected to a chamber (64) that is delimited in the bore (56) by the rear surface of the valve piston (60) oriented away from the end surface of the at least one delivery element (16, 18).